

FIG 1

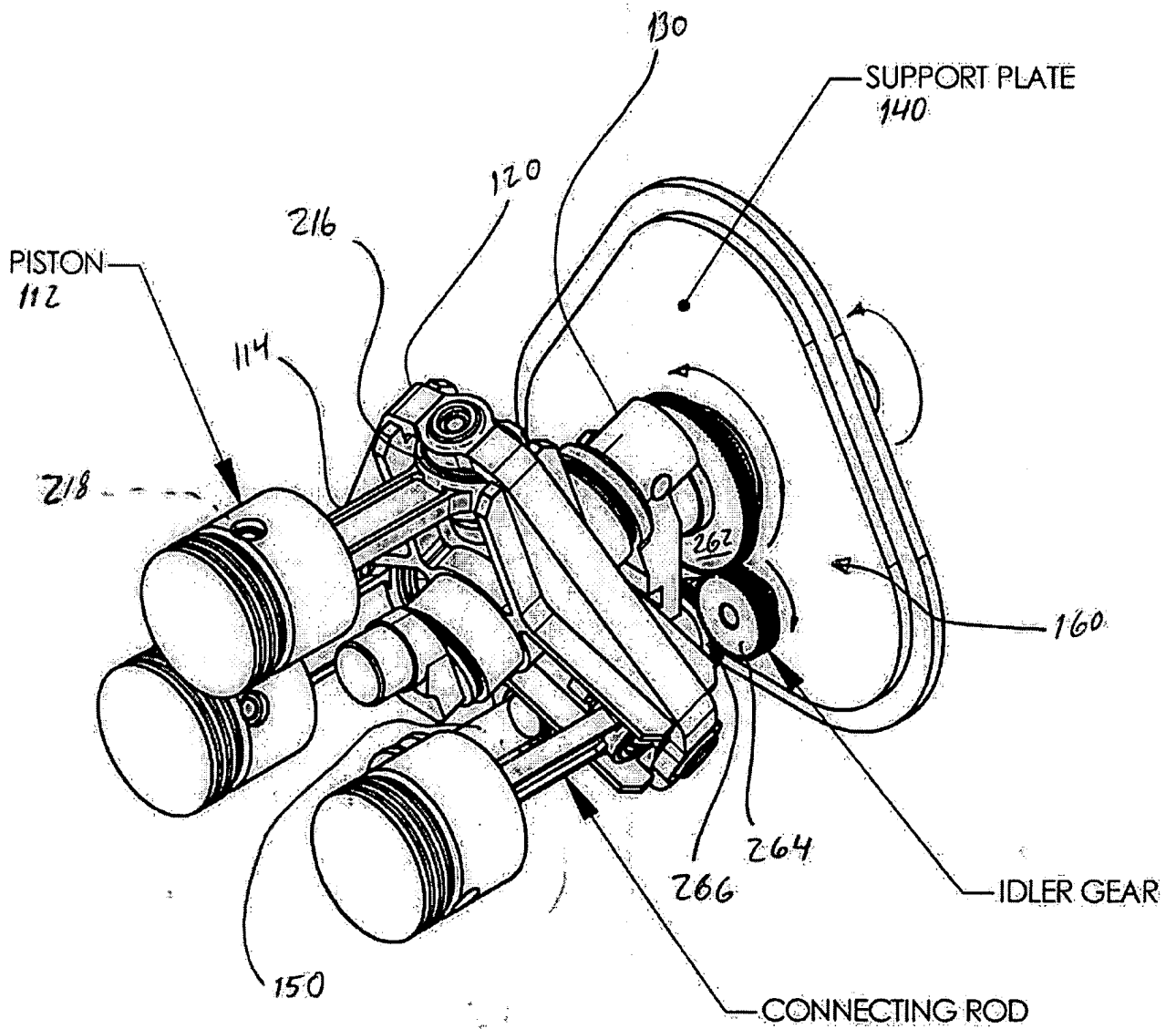


FIG 2

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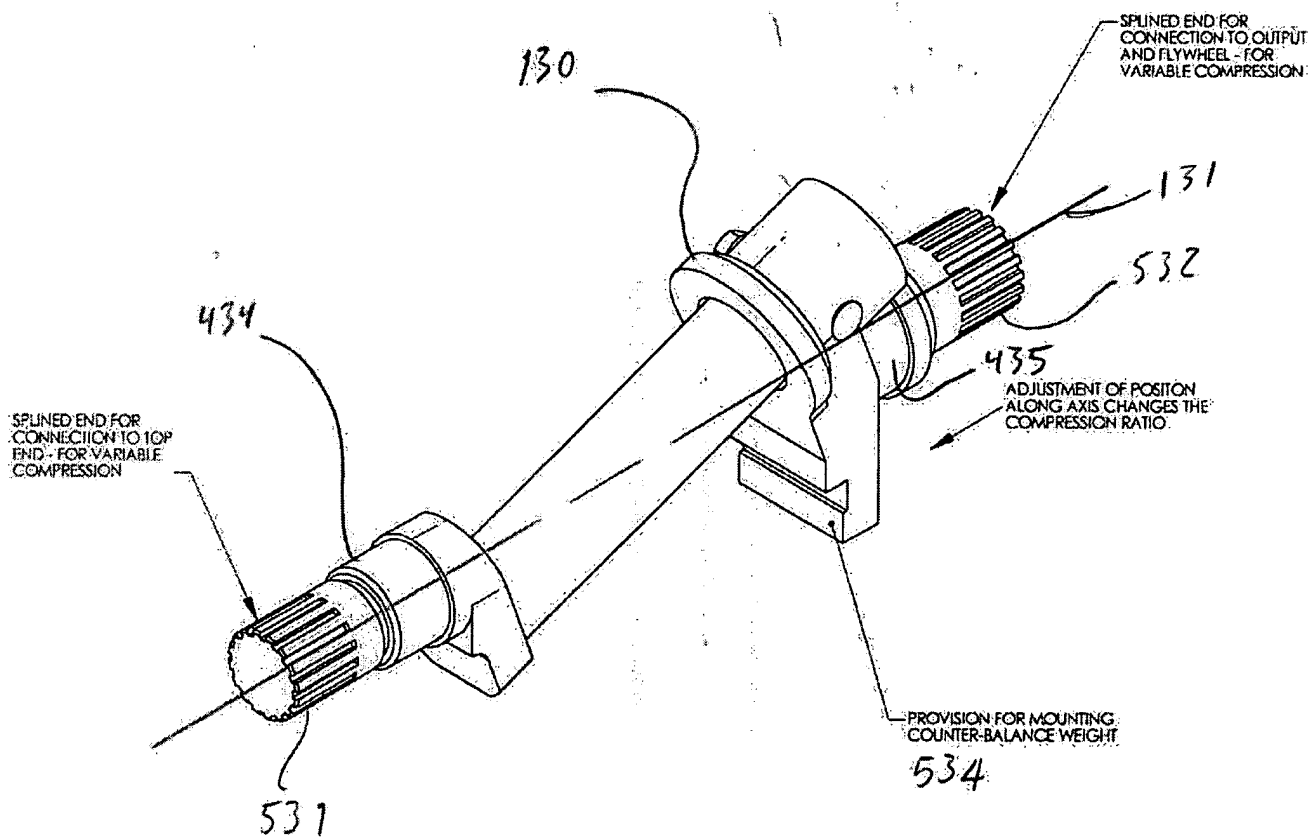
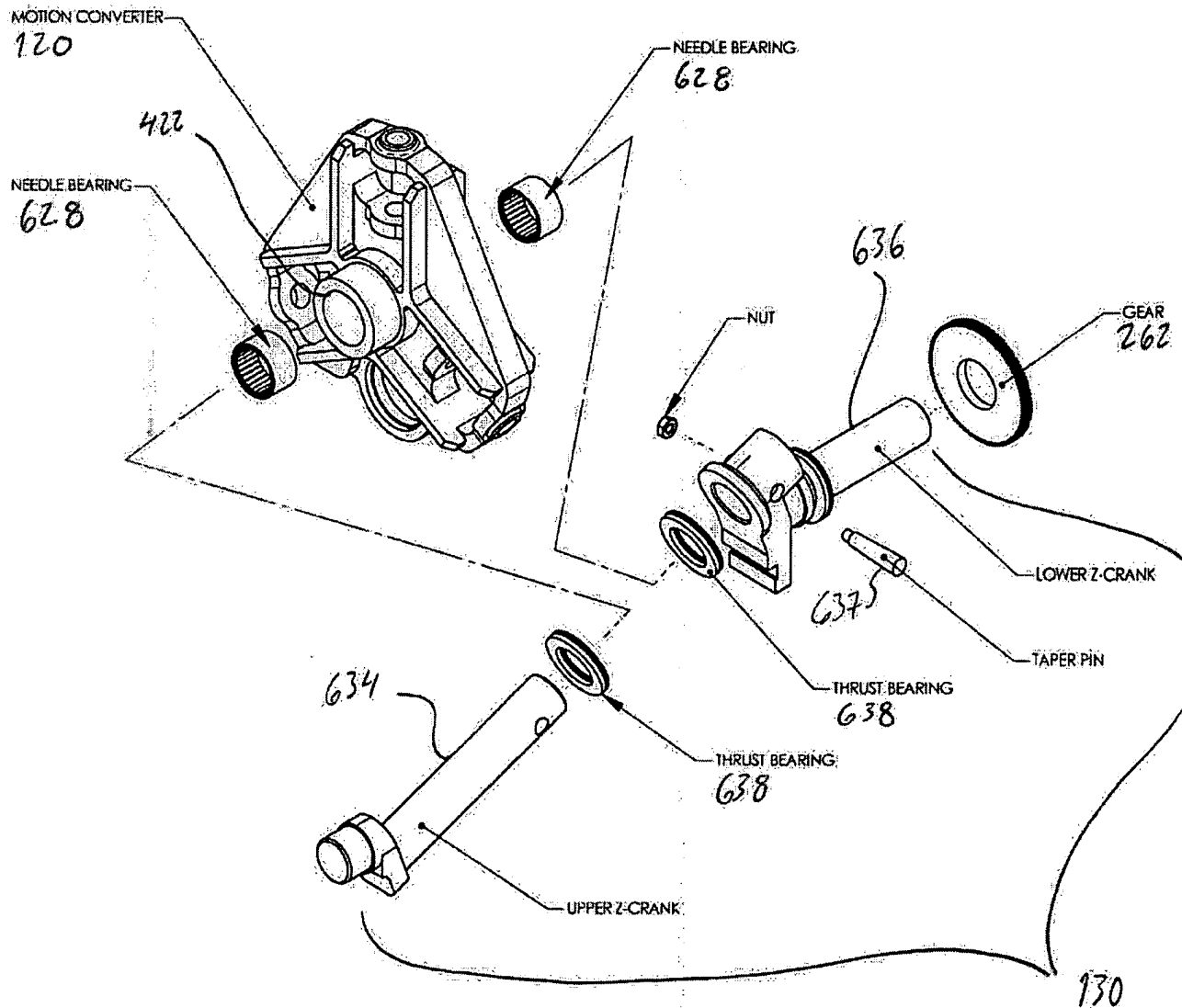


FIG 5

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FLG 6

BEST AVAILABLE COPY

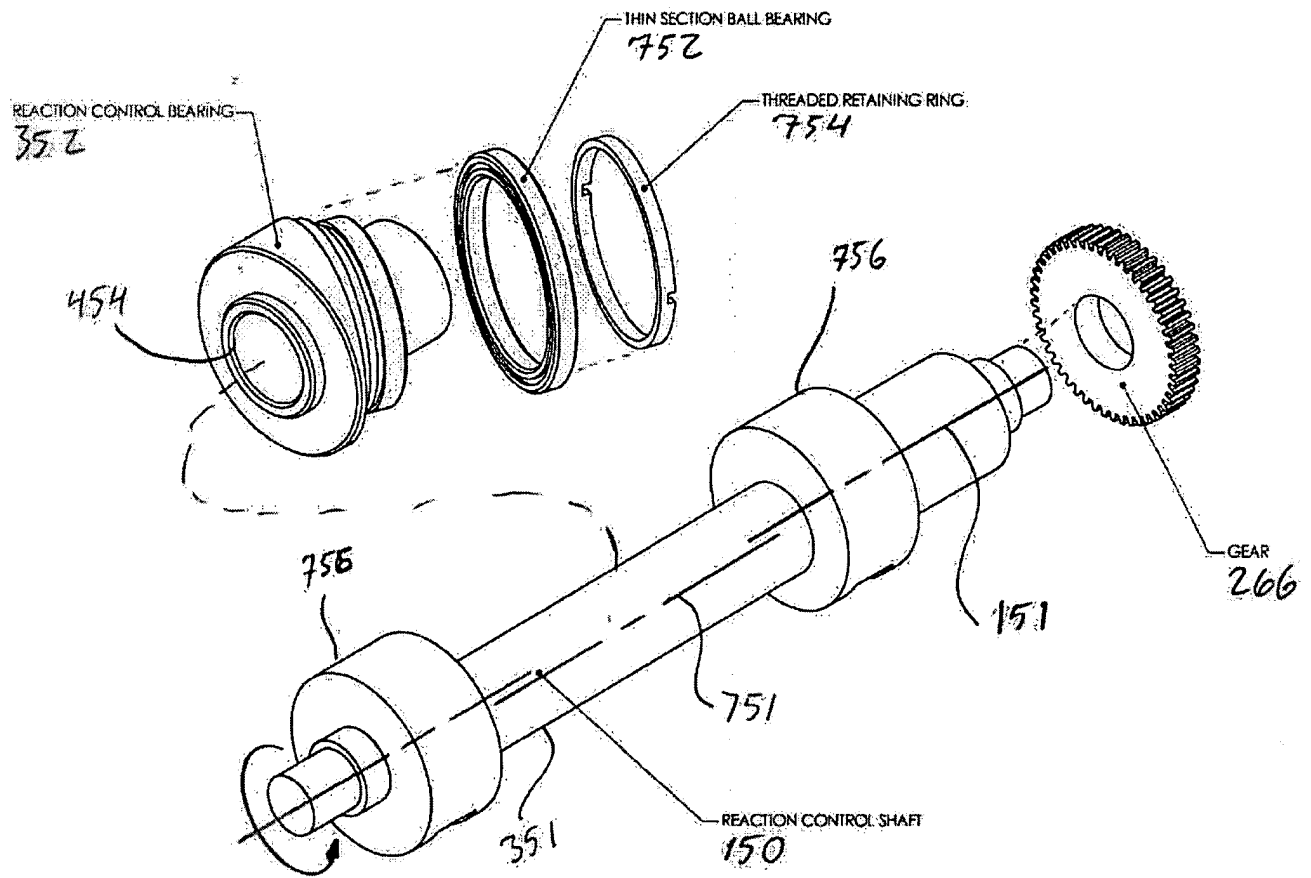


FIG. 7

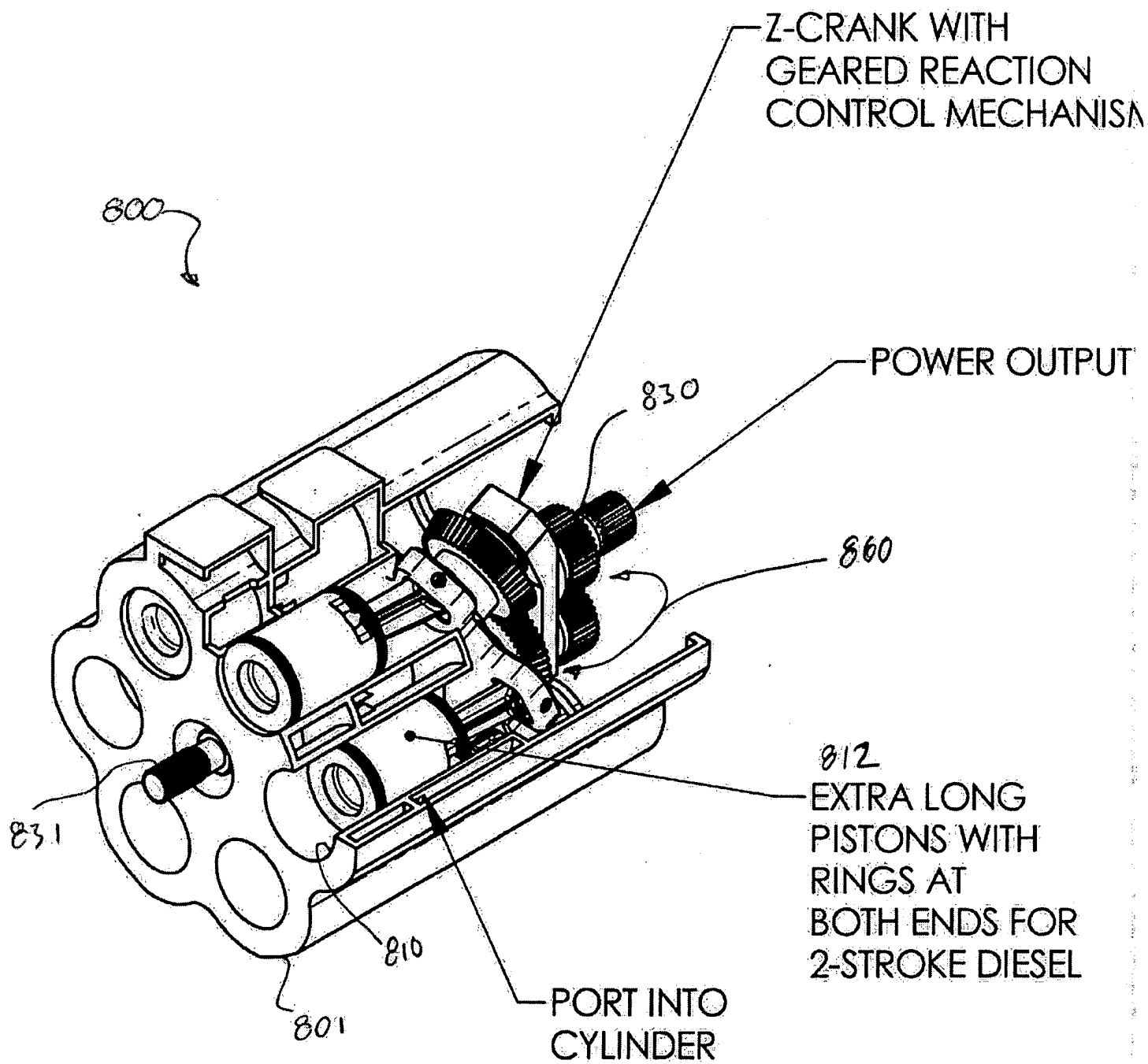


FIG. 8



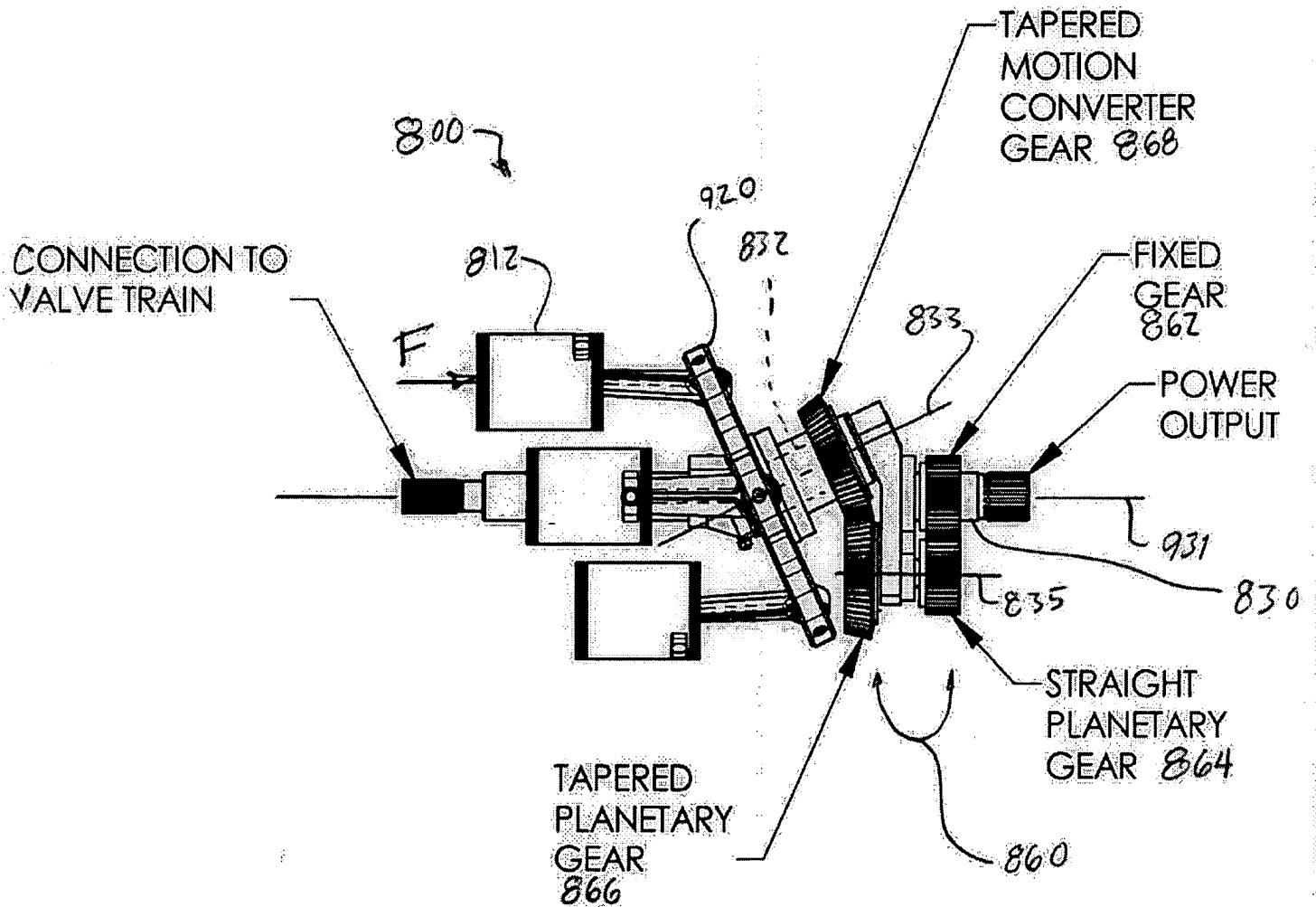


FIG 9

800

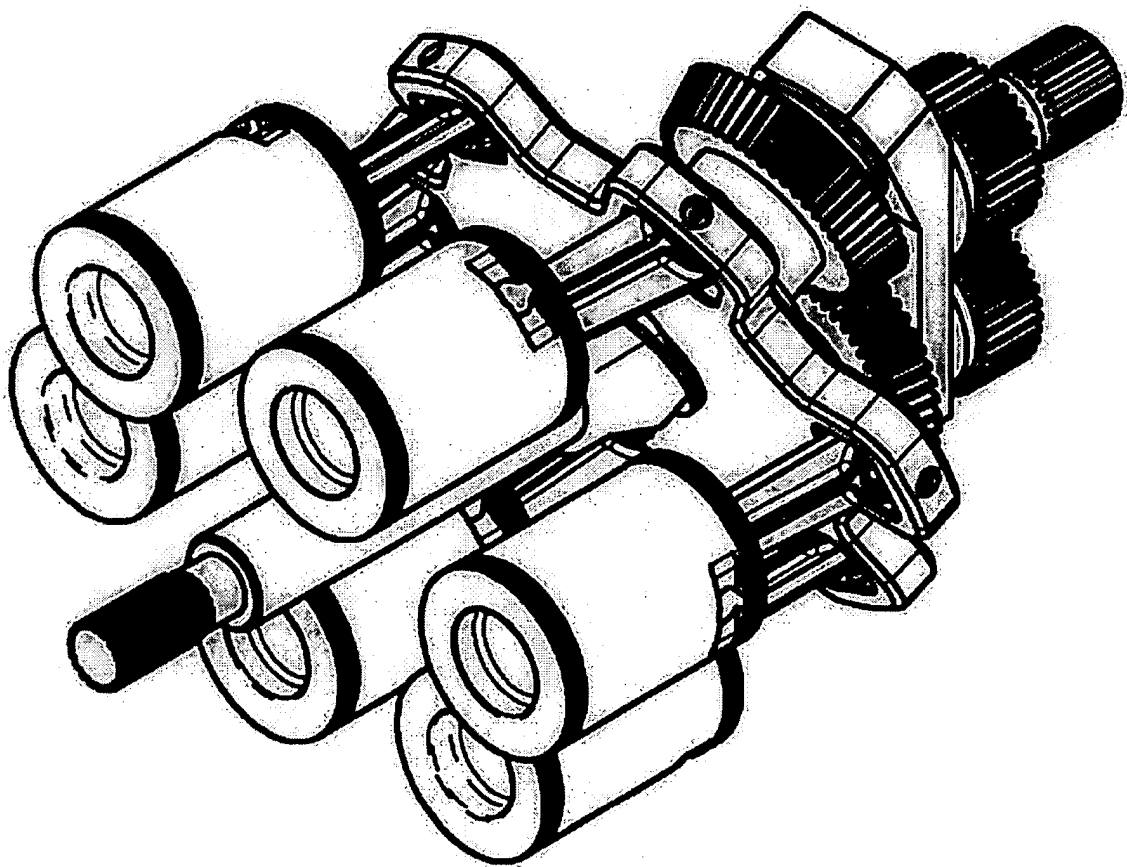


FIG 10

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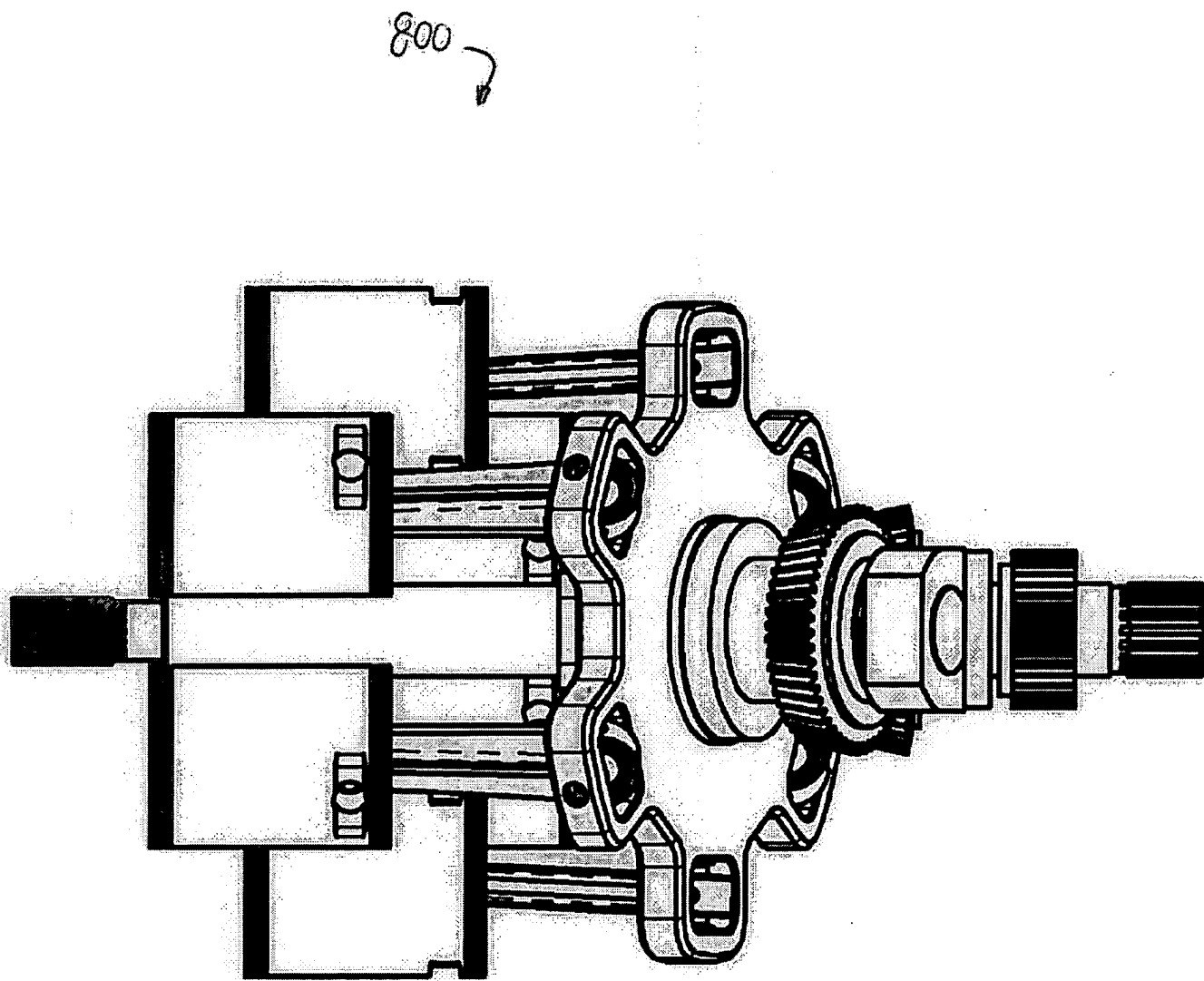


FIG 11

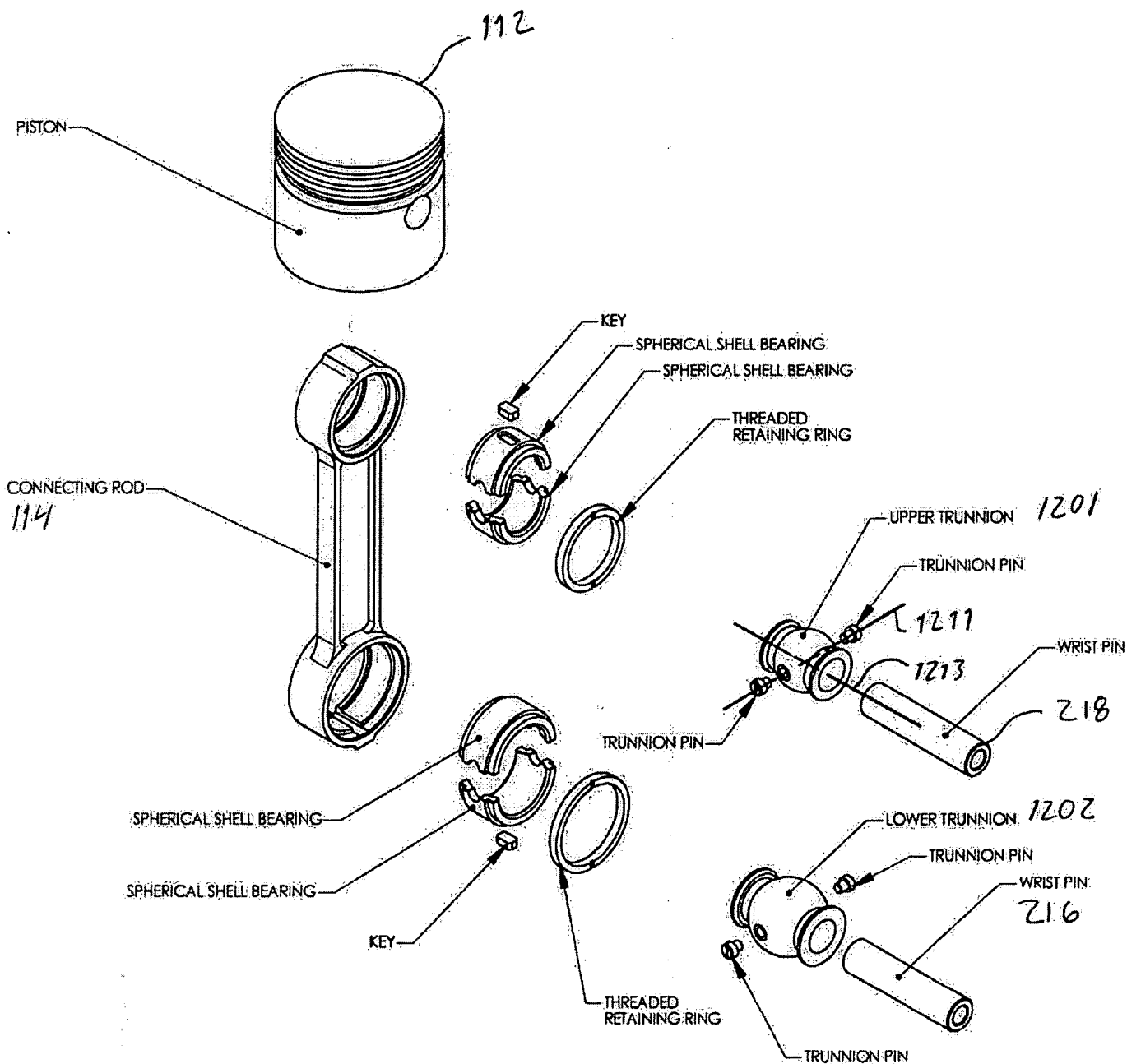
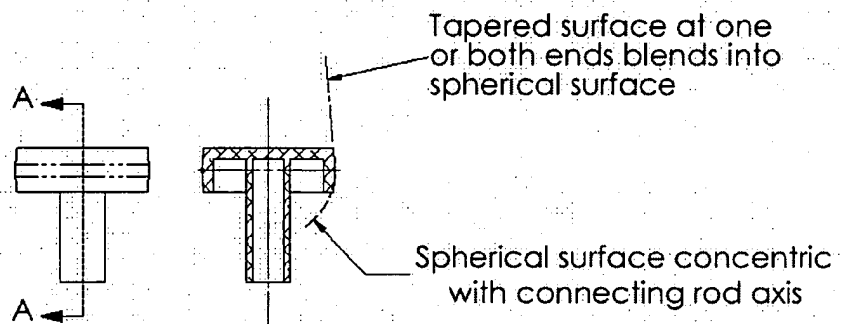
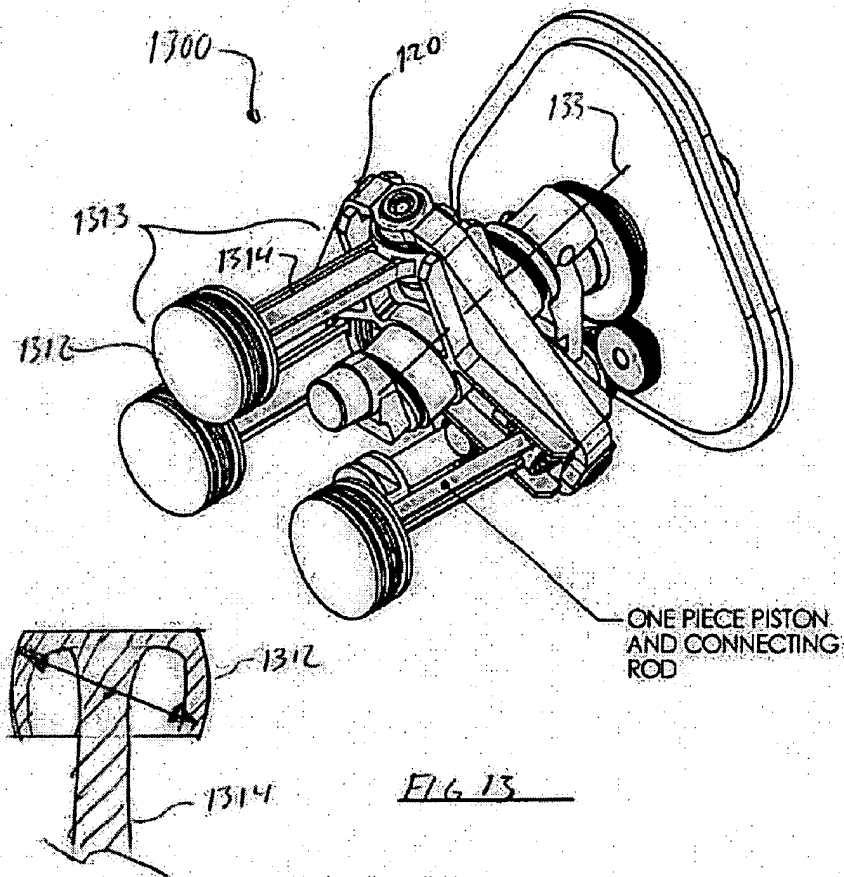


FIG 12



Note: grooves for piston rings omitted for clarity

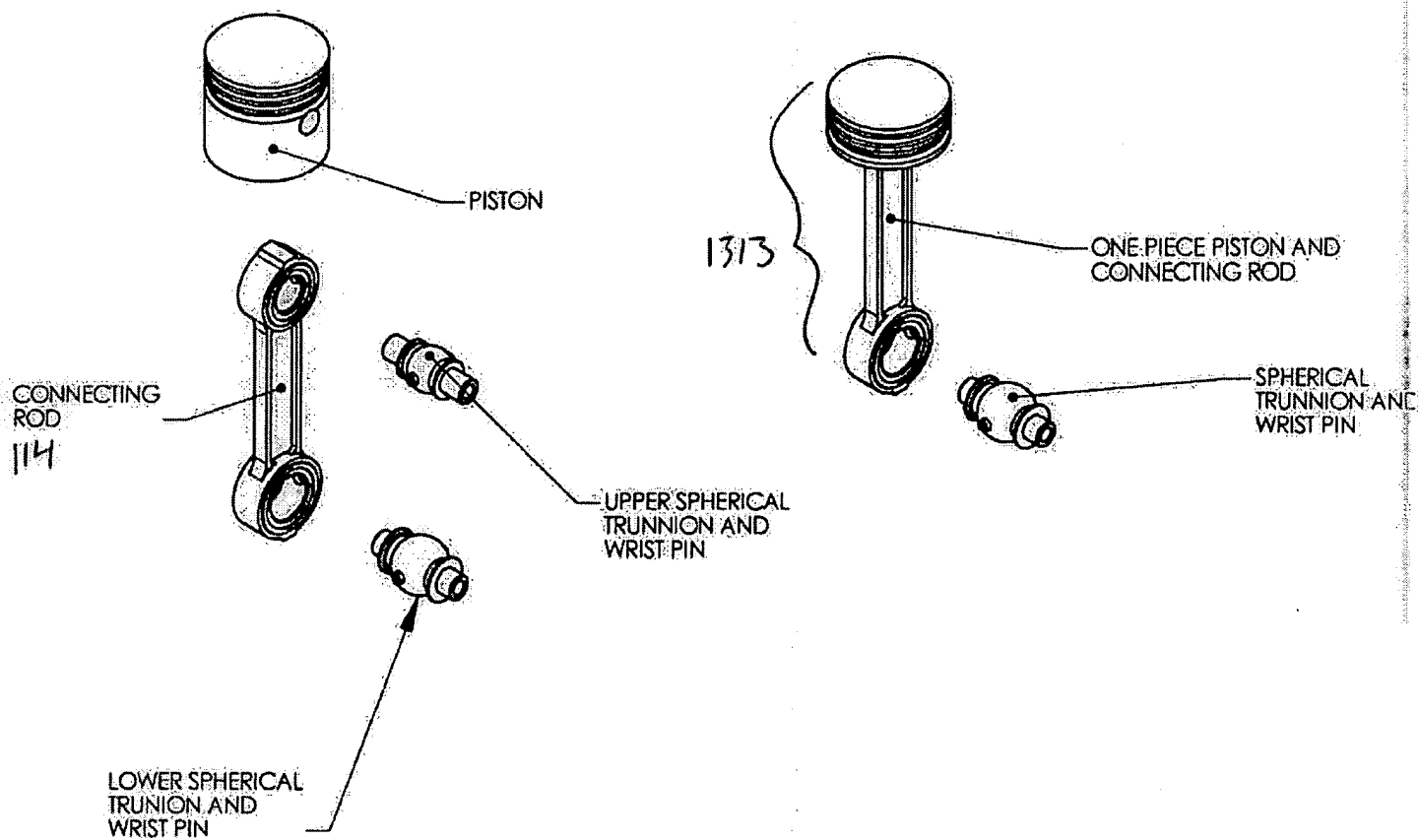


FIG. 14

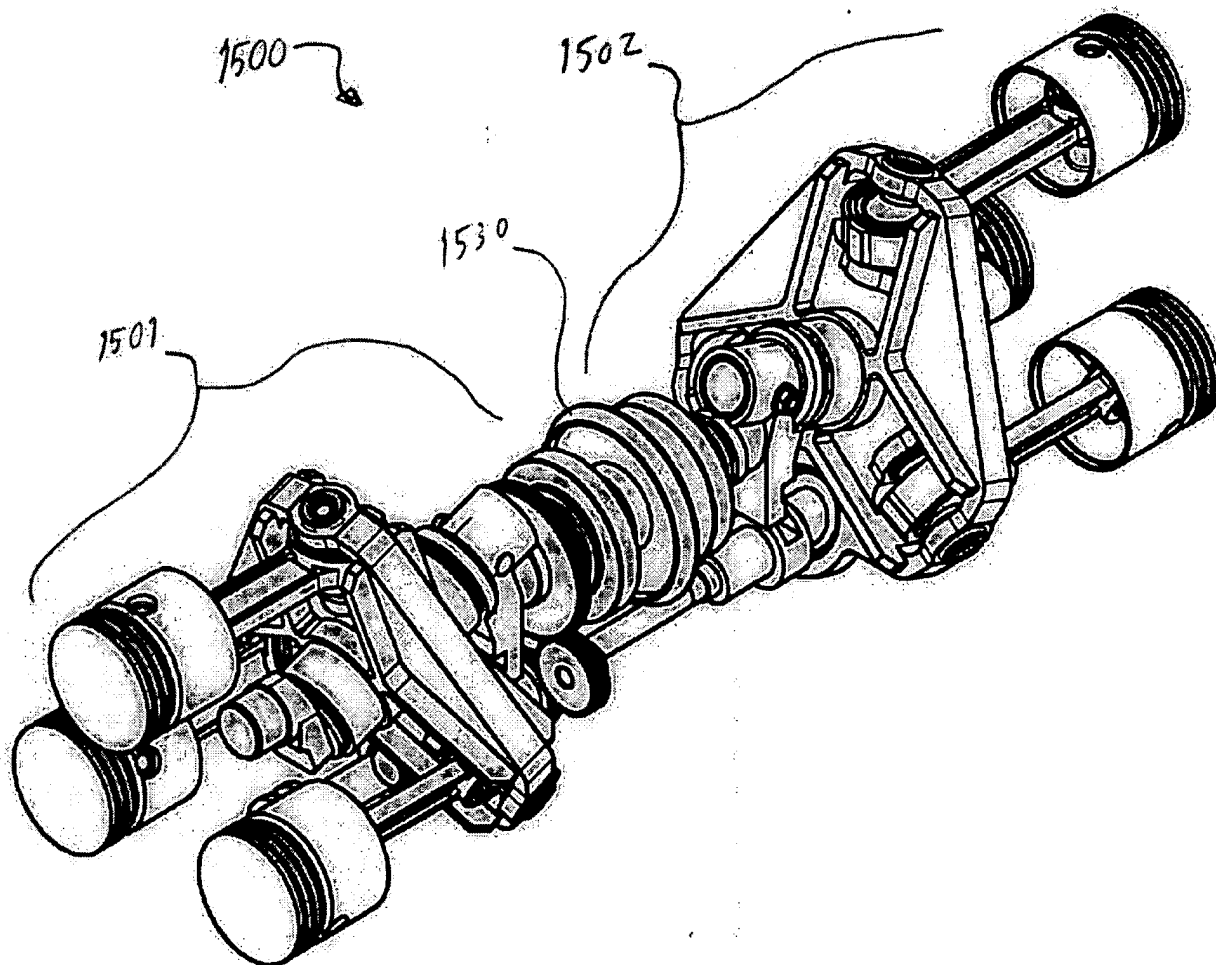
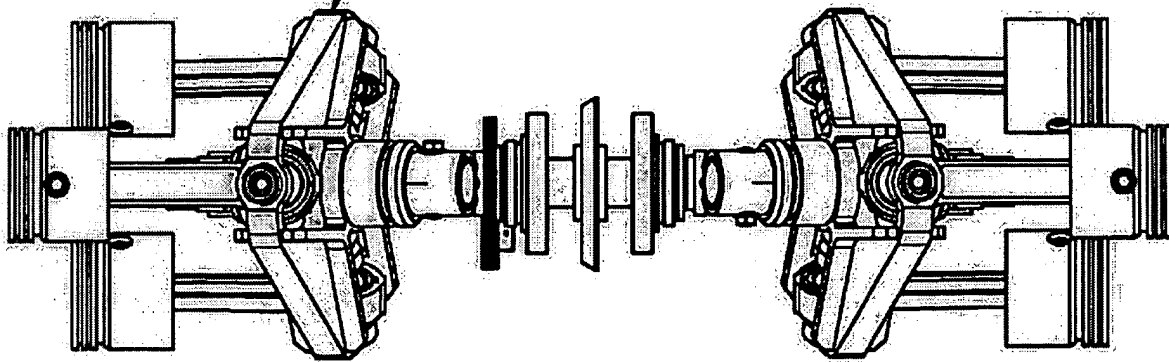


FIG. 15

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OPPOSED MOTION  
CONVERTERS ARE IN  
PHASE FOR 4 STROKE  
ENGINES AND OUT OF  
PHASE FOR 2-STROKE AND  
COMPRESSOR APPLICATIONS



DUAL Z-CRANK CARRIES  
OPPOSED PISTON  
THRUST LOADS

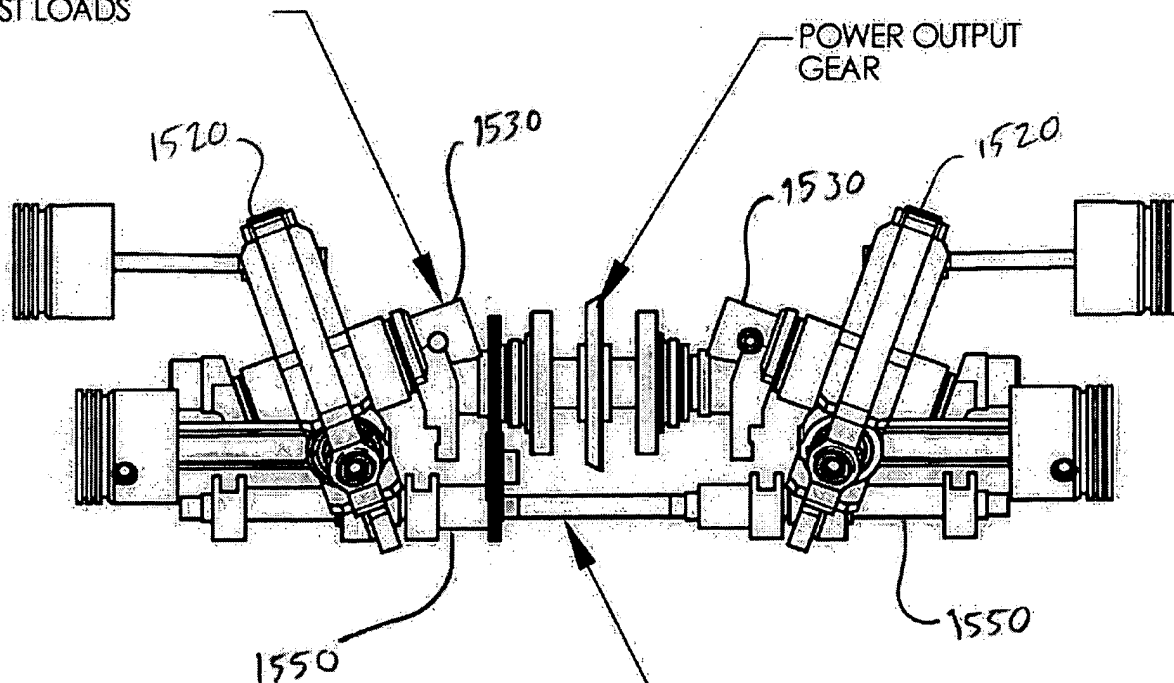


FIG 16

REACTION CONTROL SHAFTS  
ARE JOINED

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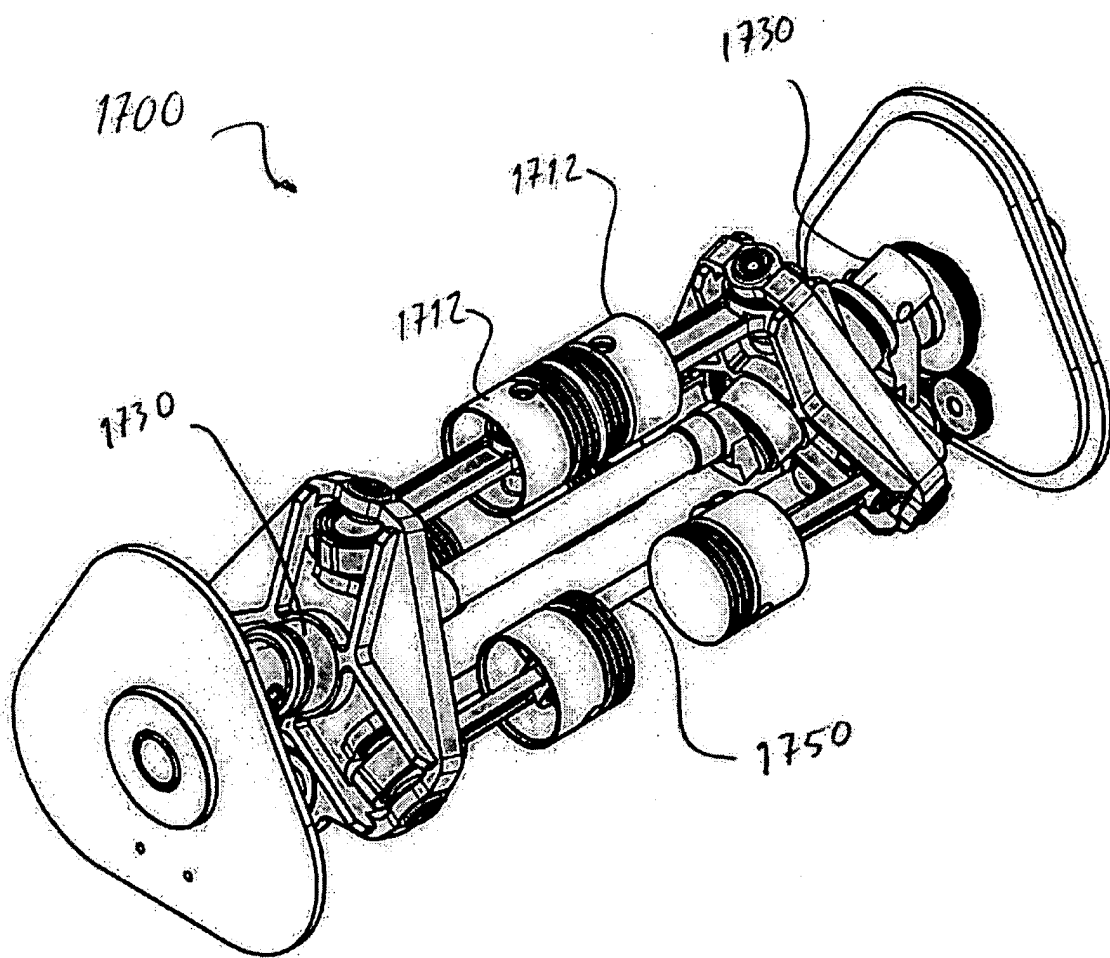
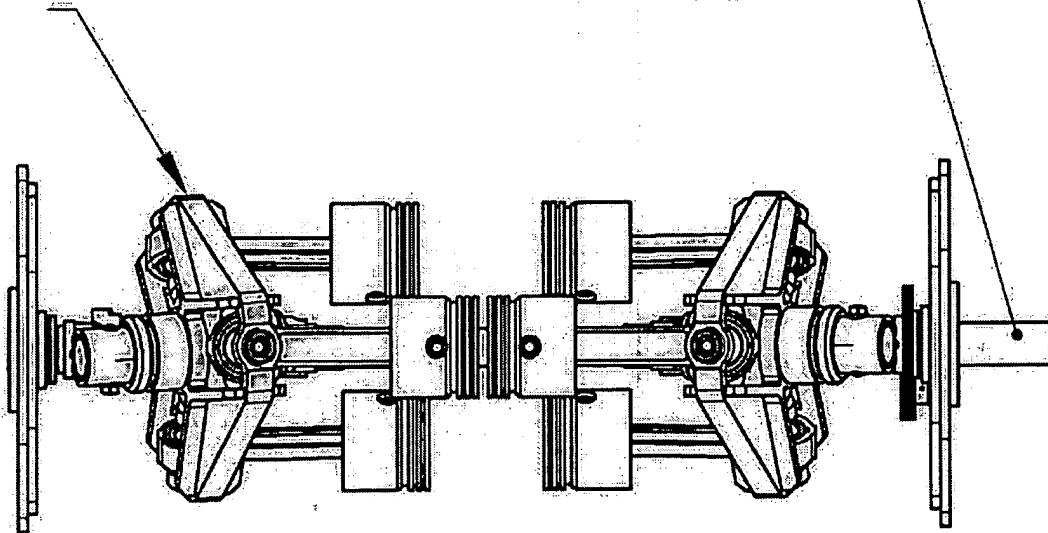


FIG 17

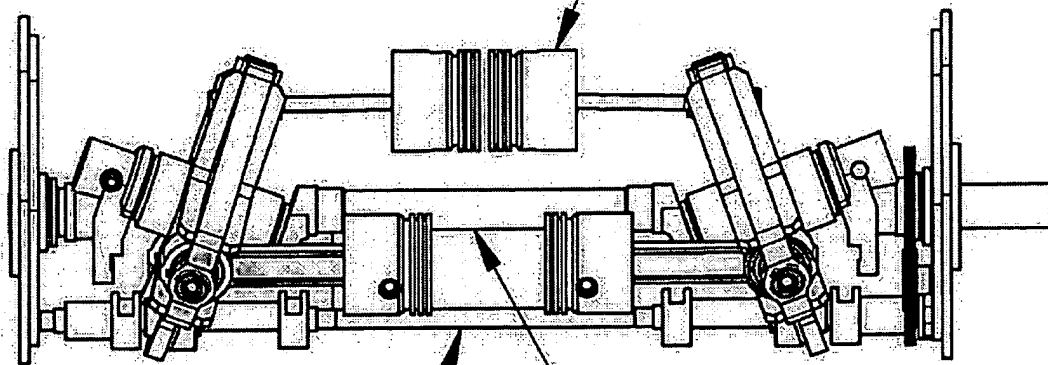
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OPPOSED MOTION  
CONVERTERS ARE  
SLIGHTLY OUT  
OF PHASE

POWER OUTPUT  
SHAFT



OPPOSED PISTONS  
SHARE CYLINDER BORE



REACTION CONTROL SHAFTS  
ARE JOINED

DUAL Z-CRANK CARRIES  
OPPOSED PISTON  
THRUST LOADS

FIG 18

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